#2 다음 부정적분 구하시오.

(1) $\int (3x-1)^{10}\,dx = \frac{1}{3}\int t^{10}\,dt = \frac{1}{3}\times\frac{1}{11}\times t^{11} + C$

$= \frac{1}{33}(3x-1)^{11} + C$

$3x-1 = t$

$3\,dx = dt$

(2) $\int \frac{e^x}{e^x-1}\,dx = \int \frac{1}{t}\,dt$

$t = e^x - 1$ $= \ln|t| + C$

$dt = e^x\,dx$ $= \ln|e^x-1| + C$

(3) $\int x e^{x^2+3}\,dx = \frac{1}{2}\int e^t\,dt$

$x^2+3 = t$ $= \frac{1}{2}e^t + C$

$dt = 2x\,dx$ $= \frac{1}{2}e^{x^2+3} + C$

(4) $\int \frac{1}{(x-1)^3}\,dx = \int \frac{1}{t^3}\,dt = \ln|t|^3 = 3\ln|t| + C$

$= 3\ln|x-1| + C$

$t = x-1$

$dt = dx$

#3 다음 부정적분 구하시오